

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Amendment of Part 90 of the Commission's Rules)	WP Docket No. 16-261
to Improve Access to Private Land Mobile Radio)	
Spectrum)	
)	
Land Mobile Communications Council)	RM-11719
Petition for Rulemaking Regarding Interim)	
Eligibility for 800 MHz Expansion Band and)	
Guard Band Frequencies)	
)	
Petition for Rulemaking Regarding Conditional)	RM-11722
Licensing Authority)	
)	

To: The Commission

COMMENTS OF CSAA

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Summary

As shown herein, there is no justification for removing the central station restriction from any of the Group D Low Power Pool channels, as the alarm industry is making significant use of these frequencies and there are numerous alternatives available to non-central station users under other parts of the Low Power Pool. Moreover, industry and regulatory developments are creating the need for more dedicated central station spectrum in the immediate future, and any removal of the central station restriction is premature. Therefore, the Commission should maintain the central station restriction on the higher powered 90.35(c)(63) primary channels as well. However, if the Commission will remove the data restrictions on the primary channels, CSAA will concur in the assignment of 4 of the 6 urbanized central station primary frequencies for non-central station operations in areas where there is no alarm use, as part of the frequency coordination process; and CSAA will concur in the grant of waiver requests on a secondary basis to use the same four urbanized primary channels for non-central station operations, in markets in which there are alarm operations. The nationwide primary channels should remain under the central station restriction.

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The Central Station Alarm Association and its related Alarm Industry Communications Committee (collectively "CSAA") hereby submit these comments on the Commission's *Notice of Proposed Rulemaking* (NPRM) in the above-referenced docket.¹ CSAA supports those initiatives of the NPRM that have been proposed in petitions for rulemaking filed by the Land Mobile Communications Council (LMCC), of which CSAA is a member, through its participation in LMCC's concurrently filed comments. With regard to the NPRM's proposal to remove the central station channel restriction from certain non-nationwide UHF frequencies, it is respectfully submitted that such action would be premature; and CSAA provides an alternative proposal that will increase use of these frequencies while safeguarding the ability of alarm service providers to send communications directly related to saving lives and property.

¹ 81 Fed. Reg. 65597 (September 23, 2016).

Statement of Interest

CSAA was created in 1950 and represents the vast majority of entities providing central station alarm security protection services approved by Underwriters Laboratories, Factory Mutual and similar agencies, in the manner contemplated by Section 90.35(c) of the Commission's Rules. CSAA members fulfill a fundamental spectrum use goal articulated by the Communications Act of 1934, as amended (the "Act"). These companies and associations are dedicated solely to "promoting the safety of life and property through the use of wire and radio communication." Central station alarm operations protect tens of millions of families in their homes; and they protect a wide range of sensitive facilities from fire, burglaries, sabotage and other emergencies, including government facilities, power plants, hospitals, dam and water authorities, pharmaceutical plants, chemical plants, schools/universities, and other critical facilities that could become the target of terrorist attacks as well as other life threatening events. In this regard, central station alarm services often act as the "front line" in dispatching municipal police and fire units whose radio operations are part of the Public Safety Radio Service. Silent sentinels located on a customer's premises sense fire, home invasions, medical emergencies, carbon monoxide and other threats, and instantly transmit this data to a central station. The central station in turn screens the alarm and alerts the dispatch office of municipal authorities, usually police or fire departments, which then dispatch police officers, fire fighters, EMTs/paramedics and other first responders.

In addition to direct coordination with public safety dispatchers, central stations may also dispatch private security personnel – further preserving state and local public safety resources. As a result, voice and fixed signaling transmissions work in tandem in "promoting the safety of life and property."

The frequencies allocated for central station use under Rule Section 90.35 are used for sending alarm signals identifying emergency conditions, and sending responses to such alarms. In light of the important and specialized use of spectrum by central stations, the Commission designated CSAA as a frequency coordinator.

Any Actions Concerning the Central Station Channels Must be Informed by the Continuing Need for Dedicated Central Station Frequencies

Any action concerning the central station frequencies must be informed by the continuing need for dedicated central station channels. The need for central station spectrum has continued, and will rise significantly, due to a number of factors that will affect the alarm industry over the next five to ten years and beyond:

Use of Wireless Alarm Devices is Already on the Rise

First, the use of alarm systems is on the rise, for a variety of reasons. Modern alarm systems incorporate smart technology that allows a homeowner or business to not only monitor against dangerous conditions but also take proactive actions to control the premises and address any issues.² Moreover, people and businesses are more security conscious, in the wake of a never ending series of terrorist attacks on 9/11, at the Boston Marathon, in the streets of Paris, and at a holiday party in San Bernadino. And as new alarm systems are installed, the use of wireless devices to relay alarm signals of all types to the central station has become the trend. In particular, an Alarm Industry Communications Committee 2016 Member Survey indicates that use of wireless alarm devices as the connection to the central station has increased from approximately 45 percent in 2013 to 57 percent in 2016, and is expected to continue this upward trend. There are multiple reasons for this increase:

- Wireless alarm devices are easier to install. There is less need to do extensive wiring, and it is much simpler to avoid damaging the premises through the installation process.
- Wireless alarm systems are not capable of being defeated by cutting a phone line.
- Wireless alarm systems can carry alarm data at greater speeds.

² A new Parks Associates report finds smart home offerings have helped revitalize the residential security industry, as the number of households with monitored security rose over 15% in the past two calendar years. The New Face of Home Security - 2015 Edition reports approximately 21 million U.S. homes have professionally monitored security, with another 1.5 million with monitoring in a second home. <http://www.parksassociates.com/blog/article/pr-11232015-home-security>

Given these factors, alarm companies are now marketing wireless alarm systems as a selling point, which in turn increases the number of wireless installs.³ Certain alarm companies, such as Vivint and SimpliSafe, are now doing only wireless alarm system installations. This rise in wireless installations is reflected in the growing sales of AES-Intellinet, a leading manufacturer of alarm radios that operate on the dedicated central station frequencies that are being addressed in this proceeding. Per John Milliron, Vice President of Sales for North America, AES Corp. (see Attachment A hereto):

AES Corp performed well in 2015 as the need for technology stability at the end-user level continues to evolve, and AES expects continued growth in 2016. AES estimates deployment of approximately 400,000 of its radio transceivers using central station frequencies, half of which are for detection of fires. The growth in 2015 vs. 2014 for fire units was 27.92%. AES is forecasting growth of at least 10% for 2016.

Frequent Cellular Technology Changes Create Issues for the Alarm Industry

Changes in the cellular industry is another factor that is driving several alarm companies to switch to dedicated central station alarm channels. Many wireless alarm systems operate on the cellular network, which has been a valuable tool for alarm companies, and will continue to be in the future. However, there are issues associated with this alternative for wireless alarm operations, because of frequent cellular technology changes. The first technology change was the sunset of analog cellular (“AMPS”) to make way for digital (2G) cellular.⁴ At the time of that transition, the alarm industry estimated that 1 million alarm radios had to be transitioned from AMPS to 2G.⁵ Now there are several million digital alarm radios that must be transitioned, as the

³ See, e.g., Guardian Security: “When you trust Guardian Security to provide you with wireless security system monitoring, your business can benefit from around the clock security protection without the need for a landline phone.” <http://www.guardiansecurity.com/seattle-alarm-monitoring/#>; see also ackermansecurity.com webpage touting its wireless system because:

- Doesn't require a landline to work, so you can save money while staying safe
- Uses a wireless GSM device with backup battery, so it works even if your landline is cut or your internet is out
- Carries more data at greater speeds compared to other monitoring services, meaning it sends a quicker signal to our security monitoring station”

⁴ See WT Docket No. 01-108.

⁵ See AICC's January 19, 2007 Comments in WT Docket No. 01-108 (at p. 23).

cellular industry is proceeding rapidly with the sunset of its 2G service.⁶ And as documented in the Commission's proceeding concerning the AMPS transition, alarm radios are fixed radios that are intended to last 10 or more years; are usually installed in closets, attics or other concealed areas; and therefore unlike cell phones that are brought in by the customer for frequent upgrades, replacement of alarm radios due to technology changes requires a truck roll, with an average cost of \$1000 per customer.⁷

While the inclusion of the AMPS standard in the original cellular rules created regulatory safeguards for its sunset, necessitating a transition period for AMPS users, the same is not true of new cellular technologies. Thus, as the cellular industry has shifted from 2G to 3G, and from 3G to 4G, the use of cellular technology involves recurring technology transitions, with no control over the timing. Indeed, even as the cellular carriers are terminating their 2G services for good, and racing to implement 4G LTE, they are already pushing the Commission to advance the ball on 5G technology.⁸

In light of this dynamic, several alarm companies have decided to join those that are using the dedicated central station channels allocated under Rule Section 90.35(c). See Attachment A. For example, Alarm Detection Systems, Inc. of Aurora, Illinois now has 11,000 customer radios operating on dedicated central station channels, while only 1000 of its customers remain on cellular radios.⁹ Guardian Alarm, one of the largest

⁶ See, e.g., "AT&T 2G network shutdown: Learn about the upcoming 2G network shutdown to be completed by the end of 2016", <https://www.att.com/esupport/article.html#!/wireless/KM1084805>.

⁷ As noted in AICC's January 19, 2007 Comments in WT Docket No. 01-108 (at p. 15), the installation cost per radio will range from \$450 to \$750. And the replacement radios will cost between \$150 and \$300. There will be back office/organizational costs on top of that.

⁸ See, e.g., Notice of Proposed Rule Making, GN Docket No. 14-177, 30 FCC Rcd. 14515 (released December 23, 2015)); Allevan, M., 'Verizon's Shammo: 5G pilot in 2017 is all about fixed wireless, not mobility,' *Fierce Wireless*, April 21, 2016 see <http://www.fiercewireless.com/tech/verizon-s-shammo-5g-pilot-2017-all-about-fixed-wireless-not-mobility>; Meyer, D., 'AT&T trials fixed wireless broadband outside of wireline markets' *RCR Wireless*, October 6, 2016 see <http://www.rcrwireless.com/20161006/carriers/att-trials-fixed-wireless-broadband-outside-wireline-markets-tag2>.

⁹ See John Milliron Declaration, Attachment A hereto. The NPRM (at para. 12) mentions satellite as an option for alarm relay. There are certain applications for which a satellite monitoring capability may be well suited, such as monitoring of unmanned outdoor facilities in remote areas. However, the alarm industry has found that satellite service is not well suited for most traditional residential and business customers. Aside from the higher costs, there are problems with time gaps in coverage based on the orbit of each satellite (e.g., available for ten minutes but then unavailable for four minutes). In addition, interruptions in line of sight due to foliage or storms can disable the connection. For most CSAA members, this has proven unacceptable for the transmission of life safety alarms in many if not most circumstances.

independently owned security companies in North America, is also using central station frequency-based radios.¹⁰

Other Recent Technology and Regulatory Developments Will Drive Up Use of Central Station Frequencies Significantly

The Commission can take official notice of the fact that Verizon, AT&T and other major telephone providers are rapidly moving to decommission their traditional telephone line technology; and the Commission has changed its regulations to allow this process to move forward.¹¹ Significantly, the Alarm Industry Communications Committee 2016 Member Survey indicates that digital alarm communicator transmitters (“DACTs”) using traditional land line technology still constitute approximately 58% of alarm connections. The alarm industry estimates that 23 million such alarm systems are still using traditional land line technology connections. And the industry estimates that the vast majority of these connections will have to be replaced over the next 7 to 10 years. Because of the risk of loss of connection associated with IP-based telephone service (due to loss of power and/or denial of service attacks), a significant portion of these tens of millions of alarm systems will likely to be converted to wireless connections, since that is the trend; and for the reasons discussed above, a substantial number of these new wireless connections will be accomplished using the central station frequencies.¹² If only a small percentage of the tens of millions of landline-based systems are converted to central station frequency connections, it would add a significant number of radios to this small number of frequencies.

¹⁰ See Attachment A.

¹¹ See Technology Transitions Report and Order, Order on Reconsideration, and Further Notice of Proposed Rule Making, GN Docket No. 13-5, 30 FCC Rcd. 9372 (released August 7, 2015); Technology Transitions Declaratory Ruling, Second Report and Order, and Order on Reconsideration, GN Docket No. 13-5, 31 FCC Rcd. 8283 at para. 194 (released July 15, 2016).

¹² See John Milliron Declaration (Attachment A): “Moreover, as the telephone industry transitions away from the traditional wireline technology that has been heavily used by the alarm industry in the past, AES expects to see a significant increase in the sale of its AES-Intellinet alarm radios that utilize the dedicated central station frequencies set aside by the FCC.”

Therefore, a substantial percentage of alarm connections will likely be going wireless over the next seven to ten years; and it is thus vital to preserve dedicated central station channels as the PSTN transition process plays out, and any reallocation of these frequencies is premature.

In addition, the need for central station channels for voice communications is still present and likely to grow. Recent disasters have shown that use of cellular as the sole means for such communications can be problematic in the event of a tornado, hurricane, flood or terrorist attack, since the cellular network can suffer significant damage; and even when working, the network becomes overburdened with calls. This was the case following the terrorist attacks on September 11, 2001 and recent natural disasters, including the Derecho that hit the eastern seaboard on June 29-30, 2012 and Super Storm Sandy.¹³ Indeed, even the Virginia earthquake caused the cellular network to become overwhelmed with calls, temporarily blocking communications, despite relatively little infrastructure damage. Moreover, recent disasters have shown that private radio operations can have greater survivability than the larger cellular towers.¹⁴ As discussed above, central stations can also dispatch armed guard responses and establish ongoing guard patrols to help ensure the safety of its customers and reduce the burden on law enforcement. The central station primary channels can be used for activities such as dispatching armed guard responses to emergencies, communicating with security patrols, coordinating restoration of service during disasters, and other functions requiring the ability to communicate with personnel in the field.¹⁵

¹³ See “Stories Of Survival Emerge From Tornado Victims”, Associated Press, March 4, 2012 (“emergency officials trudged with search dogs past knocked-down cellphone towers and ruined homes looking for survivors in rural Kentucky and Indiana, marking searched roads and homes with orange paint.”); VIM 2012 Trip to Henryville, Indiana, <http://www.fumcsantarosa.org/vim-trip-2012> (“The monster multi-vortex EF-4 tornado with winds up to 175 MPH which ripped through Henryville, Indiana left people reeling and nearby three people were killed. For several days there was no electricity and all phone service, landline as well as cellular, was nonexistent.”)

¹⁴ See, e.g., *Hurricane Katrina: Damage Assessment of Power Infrastructure For Distribution, Telecommunication, and Backup*, Grainger Center for Electric Machinery and Electromechanics, Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, August 2006, p. 18 (“If the PSTN fails, not only wire-line subscribers may lose service but also a significant portion of the wireless network may become isolated or even lose service. . . . Two-way private radio systems, such as those used by police and other emergency services, are more useful.”)

¹⁵ The Commission has concluded a series of public hearings and rule makings concerning the impact of such disasters, and has enunciated policies to encourage the use of capabilities that will ensure that safety-related communications can get through during times of emergency. See FCC Pub. Safety & Homeland Sec. Bureau, *Impact of the June 2012 Derecho On Communications Networks and Services: Report and Recommendations* (PSHSB, rel. Jan. 10, 2013)(“... above and beyond any physical destruction by the derecho, 9-1-1 communications were disrupted in large part because of avoidable planning and system failures, . . .”); See, *In re Reliability &*

While some alarm companies may elect to use cellular devices for this purpose, a number also use central station primary channels.

CSAA Responses to NPRM Proposals

A. Use of central station channels in urbanized areas where currently not in use by alarm companies: The NPRM (at para. 13) proposes to modify Section 90.35(c)(63) to remove the central station use limitation on the urban frequencies in those urbanized areas where these channels are not in use. The Commission tentatively concludes that it would be in the public interest to make these frequencies available for other PLMR operations in those areas, but seeks comment on this proposal, including its costs and benefits.

The answer to the Commission's proposal must address two different issues: (1) To what extent should the full power voice channels allocated for central station operations under Rule Section 90.35(c)(63) (known as the central station "primaries") be made available for other PLMR operations in urbanized areas where not in use?¹⁶ and (2) did the Commission intend to include the low power "offset" channels allocated under Rule Section 90.35(c)(83) & (87)¹⁷ in its proposal? Each issue is discussed below:

The Central Station Low Power Channels Must Remain Restricted

With regard to the second issue, it is not entirely clear from the NPRM if the Commission proposes to remove the central station restriction from the handful of low power offset channels allocated for use within 75 miles of urbanized areas; but to the extent that such channels are included in the proposal, CSAA vehemently opposes such change. There has been no outcry for access to the central station offset channels by other licensees. While CSAA has received coordination requests in the past for certain of the primary channels, it has no record of receiving even a single coordination request for one of the central station offsets. Nor is such request

Continuity of Communs. Networks, infra (FCC 2011); *In re Improving 9-1-1 Reliability & Continuity of Communs. Networks*, 28 FCC Rcd 3414 (F.C.C. 2013) (Reliability NPRM); *In re Improving 911 Reliability & Continuity of Communs. Networks*, 28 FCC Rcd 17476 (F.C.C. 2013) (Reliability Order).

¹⁶ The particular frequencies in question are: 460/465.900 MHz, 460/465.925 MHz, and 460/465.950 MHz.

¹⁷ These offset frequencies are assigned to Group D in the Low Power Pool. See Rule Section 90.267(f).

likely: Aside from the central station offsets, Rule Section 90.267 allocates 230 pairs of frequencies (i.e., 460 frequencies, since the frequencies can be licensed individually) plus seven single frequencies from Low Power Pool groups A1 and C, for a total of 467 frequencies. Thus, there is an ample supply of unrestricted low power channels for other PLMR operations.

In the meantime, the small number of low power channels allocated for central station operations are heavily used by alarm service providers. In particular, there are hundreds of licenses issued for central station operations on the Group D Low Power Pool channels, authorizing 5,920,510 mobiles.¹⁸ Pursuant to Rule Section 90.267(f)(1), each fixed alarm customer radio is considered a mobile unit (for ease of licensing and to protect the identity of protected customer). As shown in Attachment B hereto, a search of the Commission's licensing records shows that in many of the major markets, all or most of the 12.5 kHz central station offset channels are already licensed to central station users within the designated urbanized area: As shown in Attachment B, in New York, Los Angeles, Chicago and San Francisco, all six of the 12.5 kHz central station offsets¹⁹ are already licensed to central station operations. In Atlanta, Boston, Dallas, the Greater New Jersey area, and even Las Vegas (which is not a designated "urbanized area" because its population was too small in 1960 when the areas were established), five of the six offsets are licensed to central station operations. And in Denver and Portland, three of the six offsets are licensed to central station operations.

In this regard, the Commission's statement in footnote 33 that there were no central station licensees on the urbanized frequencies in the markets listed therein clearly contains numerous errors. For example, as noted above, in Chicago all six of the urbanized 12.5 kHz offsets are licensed to central stations, and in Dallas five of the six offsets are licensed to central stations. In addition, a spot check of ULS for the markets listed in footnote 33 indicates numerous other instances where alarm licensees occupy central station designated frequencies within an urbanized area radius, calling into question the premise of the Commission's proposal, and again highlighting how the proposed rule change is premature: *See e.g.* Station WQRB606 licensed to Alarm Security Group, LLC operating on the frequency 465.9125 MHz with an

¹⁸ These figures were compiled from the Commission's licensing records for each Group D license granted to a central station eligible.

¹⁹ 460/465.9125 MHz, 460/465.9375 MHz, and 460/465.9625 MHz.

authorized 80 KM radius of San Antonio, Texas; Station WPGU222 licensed to Protection One Alarm Monitoring, Inc. operating on the frequencies 460.9375 and 465.9375 MHz in Sedgwick County, Kansas (which includes Wichita, Kansas); Station WQFG900 licensed to Guardian Alarm Co. of Michigan operating on the frequency 465.9625 MHz at Stuart, Florida (which is located 69.82 miles from the Fort Lauderdale Executive Airport – Executive Airport Way); Station KB30725 licensed to Vector Security operating on the frequency 465.9625 MHz at Columbus, Ohio, Mansfield, Ohio (which is 56.68 miles from Akron, Ohio) and at Boardman, Ohio (which is 62.90 miles from Cleveland, Ohio); Station WQQW575 licensed to Guardian Alarm of Ohio, Inc. operating on the frequency 465.9125 MHz at Bexley, Ohio (which is 3.29 miles from Columbus, Ohio); and Station WPWD342 licensed to Vector Security operating on the frequency 460.9625 MHz at Branchville, New Jersey (which is 50.67 miles from Scranton, Pennsylvania and 59.16 miles from Wilkes-Barre, Pennsylvania).

The central station offset channels already form one of the vital spectrum resources connecting protected premises and persons to their alarm service provider; and with the trend toward using wireless alarm connections in general, and the expected surge in wireless systems as the copper PSTN is retired, the offsets will become all the more important and heavily used. Every alarm message sent over one of these frequencies indicates the detection of a fire, home invasion, excess carbon monoxide, or other condition that can threaten life and property. Therefore, the central station restriction should not be removed from any of the handful of narrowband, low power Group D frequencies, especially the heavily used 12.5 kHz offsets.²⁰

CSAA Proposal for Other PLMR Use of the Central Station Primary Channels in Areas of No Current Use

While CSAA stresses the growing need for dedicated central station alarm channels, it wishes to cooperate in a reasonable fashion with the Commission's proposal to increase use of the central station primary channels, as part of a plan to make the central station primary frequencies more suitable for alarm service use as well. As discussed further below, there is still a need for voice communications by central station alarm service providers. However, the more

²⁰ 6.25 kHz alarm devices do not yet exist, and the Commission has not yet mandated that licensees narrowband to 6.25 kHz.

important use for central station spectrum is to address the growing need for data signaling, for the reasons discussed above. However, while Rule Section 90.35(c)(64) allows limited data operations on the central station primaries, such signaling is secondary, and certain restrictions make use of these channels for alarm signaling impractical in most cases. In particular, Section 90.35(c)(64) places restrictions on the type of data signals that can be sent, the duration of such signals, and more importantly, what percentage of use data can constitute (only 10 seconds out of any 60-second period, or 16.67% of broadcast time).²¹

Therefore, CSAA proposes this alternative plan to make the central station primary channels more useful for all parties:

- CSAA proposes that four of six urbanized area central station primary frequencies (460.900 MHz, 465.900 MHz, 460.925 MHz and 465.925 MHz) be available for

²¹ Section 90.35(c)(64) provides in pertinent part as follows:

Persons who render a central station commercial protection service are authorized to operate fixed stations on this frequency for the transmission of tone or impulse signals on a secondary, noninterference base-to-base/mobile operations subject to the following conditions and limitations:

- (i) Secondary fixed operations may be used only for the following purposes:
 - (A) Indication of equipment malfunction;
 - (B) Actuation of a device to indicate the presence of an intruder, fire, or other hazardous condition on the property under the protection of the licensee;
 - (C) Indication of an abnormal condition in facilities under the protection of the licensee that, if not promptly reported, would result in danger to human life;
 - (D) Transmission, as may be necessary, to verify status of equipment; adjust operating conditions; or correct any abnormal condition; or
 - (E) Confirmation of status, or that an operation or correction has been accomplished.
- (ii) The maximum duration of any one non-voice signal may not exceed 2 seconds and shall not be transmitted more than three times.
- (iii) Systems employing automatic interrogation shall be limited to non-voice techniques and shall not be activated for this purpose more than 10 seconds out of any 60-second period. This 10-second frame includes both transmit and response times.
 - * * *
 - (vi) A mobile service frequency may not be used exclusively for secondary signaling.
 - * * *
- (xi) On these frequencies, base, mobile relay or mobile stations may transmit secondary tone or impulse signals to receivers, as provided in this section.

licensing for central station *or non-central station PLMR operations* in urbanized areas where there is no current central station use. Rule Section 90.35(c)(63) would maintain a requirement that CSAA concur in the use of such channels, so that it can assess any impact on existing alarm operations, with the understanding that CSAA will concur unless the proposed operation would encroach on the service area of a co-channel alarm incumbent or create the potential for interference. As discussed below, the alarm industry has found that traditional PLMR operations are not compatible with central station alarm operations, especially signaling operations.

- Rule Section 90.35(c)(64) would be modified to delete the above restrictions on use of central station channels for signaling, so as to increase the potential use of these frequencies by alarm service providers.
- The remaining urbanized area central station frequencies (460.950 MHz and 465.950 MHz) would remain restricted for central station alarm signaling use only. For these frequencies, any existing full power voice operations would be grandfathered.

B. Use of central station channels in urbanized areas where currently in use by alarm companies: The NPRM (at para. 14) also seeks comment on “other ways to expand PLMR users’ access to frequencies that are designated, but no longer needed, for central station commercial protection services, including by making available channels in urbanized areas where some of the urban frequencies are in use.” Commenters are directed to address related costs and benefits associated with such proposals.

In light of the absence of demand for central station low power channels by non-central stations, and the ready availability of numerous other channels in the Low Power Pool, the central station restriction should continue to apply to all of the Group D Low Power Pool offsets. And in light of the significant increase in the need for dedicated central station frequencies due to the retirement of the PSTN and concerns over rapid cellular technology changes, and the need

for emergency dispatch channels in the event of disasters and/or terrorist incidents that may make the cellular networks unusable, it is respectfully submitted that it is premature to reallocate the central station primary channels that are located in markets in which alarm service providers are already using such spectrum. The potential for interference from incompatible users compounds this concern.

The original use of the central station primaries has fallen off in past years, as alarm companies began shifting voice communications to cellular, and the technology restrictions on the primary channels hindered the use of these channels for more valuable data communications. Nonetheless, a review of the FCC's database indicates that there are 63 incumbent central station primary licensees in the United States, authorized for 50,236 mobiles. CSAA reiterates its proposal that the data restriction of Rule Section 90.35(c)(64) be modified for all central station primaries, to allow for use of these channels in sending alarm data signals. As shown above, in several major urban areas, all or most of the urbanized central station offset channels are exhausted. With the increasing need for signaling channels discussed above, these data channels will soon be exhausted in many markets. By preserving the central station primary channels for alarm use, and enabling full time data use on these frequencies, the Commission can take a significant step to address alarm spectrum needs for the immediate future without taking spectrum away from another allocated use.

Again, the alarm industry is sensitive to the possibility that extraordinary circumstances may arise in which the use of a central station primary channel may address a spectrum shortfall. In this regard, the Commission can take official notice that CSAA has never protested an application for a central station primary submitted by a government entity demonstrating that public safety spectrum was exhausted. And CSAA concurred in the grant of a central station channel to a quasi-safety early warning network in New York City.²² In markets in which central station primary channels are already in use by alarm service providers, CSAA is willing to consent to non-central station waiver requests to use the same four urbanized primary channels *on a secondary basis*, with the understanding that alarm operations would not be coordinated on

²² See Citywide Disaster Services, Inc. -- FCC File No. 0003758417.

top of waiver grantees unless all other central station primary channels were exhausted in market.

In any instance in which the non-central station proponent would be asking for the last available central station primary in an area, CSAA would have grounds for declining coordination. In the lone waiver request cited by NPRM as justifying the proposal to modify the central station restriction (involving Emergency Radio Service, Inc. - File No. 0006451072), the applicant requested ALL of the central station primary frequencies for centralized trunking, which would have left NO channels for future alarm operations.²³

C. Commenters also should address the current and expected future need for central station commercial protection service channels in the 460-470 MHz band. For example, in the areas where some frequencies are in use, how many urban frequencies should continue to be set aside?

For the reasons set forth above, all of the current central station low power and primary frequencies (including the handful allocated for use on a nationwide basis) should remain restricted to central station use. Given the industry and regulatory circumstances that are currently unfolding, and which are beyond the control of the alarm industry, it is premature to remove the central station restriction at this time. CSAA has proposed an alternative approach that would be less intrusive, and would allow for non-central station use of a majority of the urbanized central station primary channels under appropriate safeguards.

D. Can central station commercial protection service and other PLMR operations coexist?

Attachment C hereto is the Declaration of Owais Hassan, Vice President of Engineering for AES Corp., Peabody, Massachusetts. He has reviewed the FCC's inquiry in WP Docket No. 16-261 as to whether central station commercial protection service and other PLMR operations can coexist; and he has confirmed that the alarm industry has found that traditional PLMR operations are not compatible with central station alarm operations, especially data signaling

²³ In that instance, CSAA identified alternative non-central station channels that were available for licensing by Emergency Radio Service, Inc., and the application was amended to resolve the matter. See January 6, 2015 Reply Comments of CSAA at Exhibit 1. In several other instances, applications have been filed by non-central station entities for central station channels by mistake, and these applicants have been able to readily switch to a compliant channel when the error was brought to their attention by CSAA or the Commission.

operations. The potential for coexistence issues exists with regard to both the low power “offset” central station frequencies that are part of the Low Power Pool, and the higher powered “primary” central station frequencies. As indicated by Mr. Hassan:

Alarm data signals typically consist of very short duration message packets carrying fire, burglary and other alarm signals to the central monitoring station. The entire alarm message takes a few milliseconds to complete and usually consists of multiple point-to-point messages sent every second. These alarm messages efficiently use the frequency spectrum and are delivered to central station monitoring center. However, voice operations are allowed on most Low Power Pool channels under Rule Section 90.267, and on all high powered channels. Such voice operations are inherently incompatible with alarm signaling.

Many non-central station applications such as taxi cab two-way radio operations and others can effectively monopolize the channel by sending lengthy radio signals. Such applications can make use of centralized controller or trunk architecture, whereby voice and sloppy data messages occupy the channel airtime for several seconds (or even minutes), making the channel unusable for any safety-critical fire and burglary applications. . . . These types of radios do not wait for the channel to be clear, but instead transmit signals as and when they wish. They can therefore interfere or contend with and/or add significant amount of noise to wireless alarm communication taking place on the same channel, making the channel unreliable for critical life-safety central station applications. Even if not using centralized trunking technology, voice operations can introduce significant delays into the transmission of alarm signals on the same or adjacent channels. In AES’ experience, this problem can be exacerbated by PLMR users that do not observe proper sharing protocols. Such delay/interference issues can also arise with regard to alarm voice communications that may be dispatching armed guards to a crime scene, or communicating with personnel at a fire scene trying to coordinate with first responders concerning an emergency situation.

Mr. Hassan has pointed out that AES Corp. has had to deal with several instances of non-central station applications affecting critical life-safety and burglary alarm applications, and provides several examples where both co-channel and adjacent channel issues affected alarm signals.

Conclusion

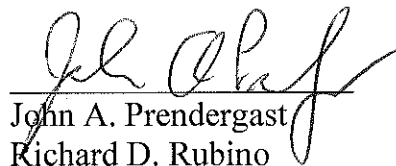
As shown above, there is no justification for removing the central station restriction from any of the Group D Low Power Pool channels; and industry and regulatory developments are creating the need for more dedicated central station spectrum in the immediate future. Therefore, the Commission should maintain the central station restriction on the higher powered 90.35(c)(63) primary channels as well. However, if the Commission will remove the data restrictions on the primary channels, CSAA will concur in the assignment of 4 of the 6 urbanized central station primary frequencies for non-central station operations in areas where there is no alarm use, as part of the frequency coordination process; and CSAA will concur in the grant of waiver requests on a secondary basis to use the same four urbanized primary channels for non-central station operations, in markets in which there are alarm operations. The nationwide primary channels should remain under the central station restriction.

Respectfully submitted,

**CENTRAL STATION ALARM
ASSOCIATION**

**ALARM INDUSTRY COMMUNICATIONS
COMMITTEE**

By:



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Filed: November 22, 2016

ATTACHMENT A

DECLARATION OF JOHN MILLIRON

I am Vice President of Sales for North America for AES Corp. Among our product lines, AES Corp. manufactures a radio based transceiver system, AES-IntelliNet, that transmits alarm signals from the protected premises to the monitoring central station on licensed FCC frequencies. Among AES' customers is Guardian Alarm, one of the largest independently owned security companies in North America. AES is seeing customers making the decision to substantially increase their use of dedicated central station channels as a way to avoid the need for frequent cellular radio replacements that utilize the public infrastructure. For example, AES customer Alarm Detection Systems, Inc. of Aurora, Illinois now has 11,000 customer transceivers operating on dedicated central station channels, while less than 1000 of its customers remain on cellular radios.

AES Corp performed well in 2015 as the need for technology stability at the end-user level continues to evolve, and AES expects continued growth in 2016. AES estimates deployment of approximately 400,000 of its radio transceivers using central station frequencies, half of which are for detection of fires. The growth in 2015 vs. 2014 for fire units was 27.92%. AES is forecasting growth of at least 10% for 2016. Moreover, as the telephone industry transitions away from the traditional wireline technology that has been heavily used by the alarm industry in the past, AES expects to see an ongoing increase in the sale of its AES-IntelliNet alarm radio transceivers that utilize the dedicated central station frequencies set aside by the FCC.

I hereby certify under penalty of perjury that, and except for those matters of which the Federal Communications Commission may take official notice, the factual assertions set forth above are true and correct to the best of my knowledge.

Signed: 
John Milliron

Dated: November 21, 2016

ATTACHMENT B

URBANIZED CENTRAL STATION 12.5 kHz OFFSETS

ATLANTA

460.9125:	Mid South Security Systems 21.9 miles	465.9125:	Mid South Security Systems 21.9 miles
460.9375:	No one w/in 75 miles	465.9375:	Universal Security Monitoring 27.7 miles
460.9625:	AFA Protective Systems 13.6 miles	465.9625:	Davis Security Services 24.1 miles

BOSTON

460.9125:	National Security Corp. 57.4 miles	465.9125:	American Alarm & Comm. 25.9 miles Electronic Alarms 48.4 miles National Security Corp. 57.4 miles Protection Monitoring 24.1 miles Sonitrol Security 63.3 miles
460.9375:	No one w/in 75 miles	465.9375:	Citizen Security 74.2 miles Massachusetts Institute of Tech. 5.2 miles National Security 32.4 miles
460.9625:	AFA Protective Systems 0.2 miles	465.9625:	Norel Service Co. 12.3 miles Home & Commercial Security 38 miles Wayne Alarm Systems 9.6 miles

CHICAGO

460.9125:	Alarm Detection Systems 35.4 & 49.2 miles DMC Security Services 18.5 miles Tyco Integrated Security 0.7 & 67.7 miles	465.9125:	Alarm Detection Systems 35.4 & 49.2 miles Emergency 24 Inc. 9.6 miles Fire & Security 19.3, 20.8, 24.1, 32.8 & 44.5 miles Tyco Integrated Security 24.8 miles
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460.9375:	Alarm Detection Systems 35.5 & 49.2 miles Keyth Security Systems 21.3 miles Tyco Integrated Security 11.3 miles	465.9375:	Alarm Detection Systems 35.5 & 49.2 miles Keyth Security Systems 21.3 miles Tyco Integrated Security 11.3 & 14.7 miles Protection Plus Security Systems 15.5 miles
460.9625:	Alarm Detection Systems 35.5 & 49.2 miles Tyco Integrated Security 11.3 miles	465.9625:	Alarm Detection Systems 35.5 & 49.2 miles Tyco Integrated Security 11.3 miles S & K Security Corp. 37.7 miles TC Security Co. 72.2 miles

DALLAS

460.9125:	Pastion Industries 34.8 miles	465.9125:	Dallas Security Systems 10.5 miles
460.9375:	Azle Communications Solutions 60.2 miles	465.9375:	Security Signal Devices 17.8 & 58.2 miles Southwest Dispatch Center 12.8 miles
460.9625:	Azle Communications Solutions 60.2 miles CSL Technologies 16.3 miles IHR Security 13.3 miles	465.9625:	CSL Technologies 16.3 miles

DENVER

460.9125:	Alarm Detection 16.4 & 69.6 miles Tyco Integrated 9.7 miles	465.9125:	No one w/in 75 miles
460.9375:	No one w/in 75 miles	465.9375:	Security Monitoring Svs. 1.2 miles
460.9625:	No one w/in 75 miles	465.9625:	Alarm Detection 16.4 miles Rocky Mtn. Security 6.1 miles

LAS VEGAS

460.9125:	ASI Communications 8.5 miles	465.9125:	Securtech Inc. 7.7 miles
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460.9375:	Fast Systems 7.6 miles Tyco Integrated Security 7.4 miles	465.9375:	Alarmco 1.8 miles
460.9625:	BearCom Operating 4.6 miles	465.9625:	AES Corporation 2.9 miles Tristar Monitoring 31 miles
LOS ANGELES			
460.9125:	Mace CSSS 26.8 miles VFS Fire & Security 27.1 miles	465.9125:	National Monitoring Center 30 miles
460.9375:	Pacific Alarm Systems 10.1 miles	465.9375:	City Wide Electronics 38.9 & 48.7 miles First Fire Systems 7.6 miles Security Signal Devices 22.9 & 58.2 miles
460.9625:	Bay Alarm Co. 8.4, 26, 39.9 & 58.4 miles Tristar Monitoring 13.8 miles	465.9625:	Allen Alarm Systems 6.5 miles Hi Desert Alarm & Fire Sprinklers 62.4 miles Vyanet Operating Group 72.6 miles Lake Arrowhead 63.1 miles
NEW JERSEY			
460.9125:	No one w/in 75 miles	465.9125:	Security Instrument Corp. 40.4 miles Seseco Inc. 62.2 miles
460.9375:	Allied Central Services 61.2 miles	465.9375:	APB Security Systems 66.4 miles ArcelorMittal Plate 51.8 miles Crime Deterrent Systems 61.1 miles Supreme Security 68.5 miles USA Central Station 20.2 miles
460.9625:	AFA Protective Systems 8.3 & 48.8 miles SDG Alarmtronics 8.3, 9.9 & 46.5 miles	465.9625:	AC Daughtry 15.5 miles Citadel Security Systems 27.7 miles SDG Alarmtronics 46.5 miles Vector Security 7,42.2, 32.8 & 51.9 miles

NEW YORK

460.9125:	Allied Central Station 14.7 & 28.1 miles American Airlines Group 13 miles Mutual Redevelopment Houses 0 miles Tyco Integrated Security 16.8 miles	465.9125:	Allied Central Station 14.7 & 28.1 miles Advanced Security Systems 12.2 miles Commercial Instruments & Alarm 63.9 miles Mutual Redevelopment Houses 0 miles
460.9375:	Allied Central Services 74.1 miles Electronix Systems Central Station 31.2 miles	465.9375:	APB Security Systems 12.1 miles Central Communications 40.2 miles Crime Deterrent Systems 18.7 miles Supreme Security Systems 13.9 miles USA Central Station Alarm 24.5 & 60.9 miles
460.9625:	AFA Protective Systems 25.3, 31.7 & 75.8 miles SDG Alarmtronics 44.9, 45.1 & 48.5 miles Signal Central Security 64 miles Vector Security 50 miles	465.9625:	A C Daughtry 29.3 miles Citadel Security Systems 63.3 miles Lydia Security 9.8 miles Metrodial Corporation 25 miles SDG Alarmtronics 44.9, 45.1 & 48.5 miles Signal Central Security 64 miles Vector Security 49.8 & 73.7 miles

PORTLAND

460.9125:	Alarm Central Station 7.5 & 50.8 miles	465.9125:	Advantage Protection 8.5 miles
460.9375:	No one w/in 75 miles	465.9375:	No one w/in 75 miles
460.9625:	No one w/in 75 miles	465.9625:	Guardian Security Systems 32.1 miles Pha LLC 1.4 miles

SAN FRANCISCO

460.9125:	D-Man Burly Systems 47.4 miles	466.9125:	Allied Security Alarms 8.9 miles Americom Central Station 3.1 miles First Alarm 42.4 & 61.1 miles Bay Alarm Company 12.4 miles Denalect Alarm 21.3 miles Morgan Alarm Co 23.7 miles Security Signal Devices 25.9 miles
460.9375:	Bay Alarm Company 12.4 miles Denalect Alarm 21.3 miles	465.9375:	
460.9625:	Bay Alarm Company 0.6,12.4,23.7, 34.5 & 65.7 miles RFI Security 55.7 miles	465.9625:	Bay Alarm Company 12.4 miles RFI Security 55.7 miles John Woods 72.7 miles

ATTACHMENT C

DECLARATION OF OWAIS HASSAN

I, Owais Hassan, am Vice President of Engineering for AES Corp., Peabody, Massachusetts. I have 23 years of engineering, research, and business development experience, specializing in wireless and secure networks technology in the security industry. I am a graduate of West Virginia University, and hold a Master's Degree in Electrical Engineering.

I have reviewed the FCC's inquiry in WP Docket No. 16-261 as to whether central station commercial protection service and other PLMR operations can coexist. The alarm industry has found that traditional PLMR operations are not compatible with central station alarm operations, especially data signaling operations. The potential for coexistence issues exists with regard to both the low power "offset" central station frequencies that are part of the Low Power Pool, and the higher powered "primary" central station frequencies.

Alarm data signals typically consist of very short duration message packets carrying fire, burglary and other alarm signals to the central monitoring station. The entire alarm message takes a few milliseconds to complete and usually consists of multiple point-to-point messages sent every second. These alarm messages efficiently use the frequency spectrum and are delivered to Central Monitoring Station. In the case of AES equipment, this delivery is accomplished through a mesh network of mobiles using short well-directed point-to-point unicast messages. An alarm message is not transmitted until the channel is clear. The distributed nature of mesh radio architecture enables large number of life safety and burglary equipment (radio subscribers) to occupy very large geographical areas and deliver alarm messages to the central monitoring station within a few seconds.

However, voice operations are allowed on most Low Power Pool channels under Rule Section 90.267, and on all high powered channels. Such voice operations are inherently incompatible with alarm signaling.

Many non-central station applications such as taxi cab two-way radio operations and others can effectively monopolize the channel by sending lengthy radio signals. Such applications can make use of centralized controller or trunk architecture, whereby voice and sloppy data messages occupy the channel airtime for several seconds (or even minutes), making the channel unusable for any safety-critical fire and burglary applications. These applications could use two-way or mobile radio equipment such as IPMobileNet's D25, Motorola's RMU2080D or others, whose communication protocol does not adhere to fire regulatory standard like NPFA72 and UL864 for central station use. These types of radios do not wait for the channel to be clear, but instead transmit signals as and when they wish. They can therefore interfere or contend with and/or add significant amount of noise to wireless alarm communication taking place on the same channel, making the channel unreliable for critical life-safety central station applications. Even if not using centralized trunking technology, voice operations can introduce significant delays into the transmission of alarm signals on the same or

adjacent channels. In AES' experience, this problem can be exacerbated by PLMR users that do not observe proper sharing protocols. Such delay/interference issues can also arise with regard to alarm voice communications that may be dispatching armed guards to a crime scene, or communicating with personnel at a fire scene trying to coordinate with first responders concerning an emergency situation.

Following are some additional technical details which highlight the incompatibility between PLMR operations on Central Station alarm operations:

- One can get many more alarm data communication users on a single frequency than is possible on voice systems
- Voice users can occupy a channel for many minutes, where data users transmit the data and go off the air.
- Voice users would be annoyed by data bursts on the channel they are on. It would prevent the voice channel from being used effectively due to all the "noise" on the data channel.
- Voice users use high power radios (typically 20W or higher) to get from point A to point B. Data radio uses only enough power to get to the next mobile. This means that data networks are much **less** likely to cause interference outside of the operational area.
- Voice users using high-power radios can stray in to frequencies outside of their operational area, thereby interfering with voice and data channels in adjacent areas.
- Voice users typically occupy a frequency pair for full or half-duplex communication. It is most common that one user will monopolize this frequency pair and will not allow effective use by any other user on the same channel pair.

AES Corp. has had to deal with several instances of non-central station applications affecting critical life-safety and burglary alarm applications:

- Sylvan Special Systems (Lake Charles, LA)

Interference Source: Trunked Radio

Effect:

Sylvan Special Systems had a major issue with interference on a low-power Central Station offset in summer of 2016. Alarm radios throughout a large area near an oil refinery system with about 100 mobiles ceased communicating with the central station

every fourth day. In the end it was discovered that the refinery had installed a trunked radio system and every fourth day the control frequency would switch to a frequency directly adjacent to Sylvan's AES frequency. Once notified of the interference they were causing, and the realization that the frequency they were using was an analog-only frequency, they took that frequency out of the control channel rotation and the interference ceased. The whole episode took 5 weeks to get resolved.

➤ Grand Central Station (Hayward, CA)

- **Interference Source:** PLMR operations from a Sanitation Company
- **Effect:** Had to obtain a new frequency for a network of 600 subscribers.

➤ Alarm Central Station (Lacey, WA)

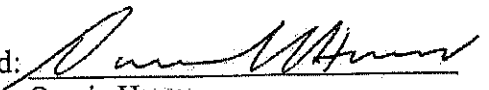
- **Interference Source:** Crane Company.
- **Effect:** Had to ask the Crane Company to change their frequencies.

➤ Western States (Colorado)

- **Interference Source:** Trucking Company transmitting high-power (20W) signals.
- **Effect:** Disruption of wireless alarm services.

Based on the experience of AES and its customers, creating widespread availability of the central station frequencies for non-alarm use would create significant risk of interference/delay of critical alarm signals that could jeopardize the safety of persons and property.

I hereby certify under penalty of perjury that, and except for those matters of which the Federal Communications Commission may take official notice, the factual assertions set forth above are true and correct to the best of my knowledge.

Signed: 
Owais Hassan

Dated: November 22, 2016